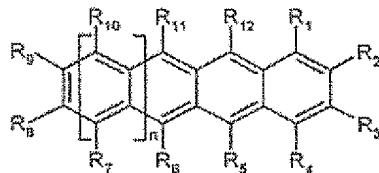


This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An organic semiconducting layer formulation, ~~which comprises: comprising~~ an organic binder which has a permittivity, ϵ , at 1,000 Hz of 3.3 or less; and a polyacene compound of Formula A:



Formula A

wherein:

each of R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉, R₁₀, R₁₁ and R₁₂, which may be the same or different, independently represents hydrogen; an optionally substituted C₁-C₄₀ carbyl or hydrocarbyl group; an optionally substituted C₁-C₄₀ alkoxy group; an optionally substituted C₆-C₄₀ aryloxy group; an optionally substituted C₇-C₄₀ alkylaryloxy group; an optionally substituted C₂-C₄₀ alkoxy carbonyl group; an optionally substituted C₇-C₄₀ aryloxy carbonyl group; a cyano group (-CN); a carbamoyl group (-C(=O)NH₂); a haloformyl group (-C(=O)-X, wherein X represents a halogen atom); a formyl group (-C(=O)-H); an isocyano group; an isocyanate group; a thiocyanate group or a thioisocyanate group; an optionally substituted amino group; a hydroxy group; a nitro group; a CF₃ group; a halogen halo group (Cl, Br, F); or an optionally substituted silyl group; and

wherein independently each pair of R₂ and R₃ and/or R₈ and R₉, may be cross-bridged to form a C₄-C₄₀ saturated or unsaturated ring, which saturated or unsaturated ring may be intervened by an oxygen atom, a sulphur atom or a group shown by formula -N(R_a)- (wherein R_a is a hydrogen atom or an optionally substituted hydrocarbon group), or may optionally be substituted; and

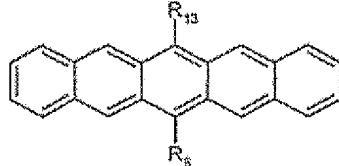
wherein one or more of the carbon atoms of the polyacene skeleton may optionally be

substituted by a heteroatom selected from N, P, As, θ O, S, Se and or Te atom; and wherein independently any two or more of the substituents R₁-R₁₂ which are located on adjacent ring positions of the polyacene may, together, optionally constitute a further C₄-C₄₀ saturated or unsaturated ring optionally interrupted by θ O, S or -N(R_a) where R_a is as defined above) or an aromatic ring system, fused to the polyacene; and wherein

at least one of R₁ to R₁₂ is an optionally substituted C₁-C₄₀ hydrocarbyl group that is a saturated or unsaturated acyclic group, or a saturated or unsaturated cyclic group, and

n is 0, 1, 2, 3 or 4.

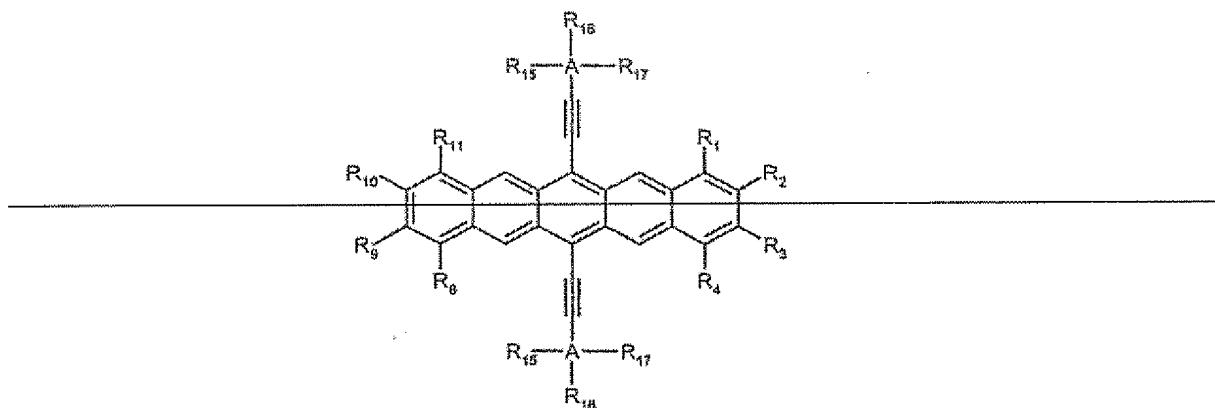
2. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 1, wherein the polyacene compound is selected from Compound Groups a compound of formula 1 or 8 or isomers an isomer thereof wherein: compound Group 1 is represented by Formula 1:

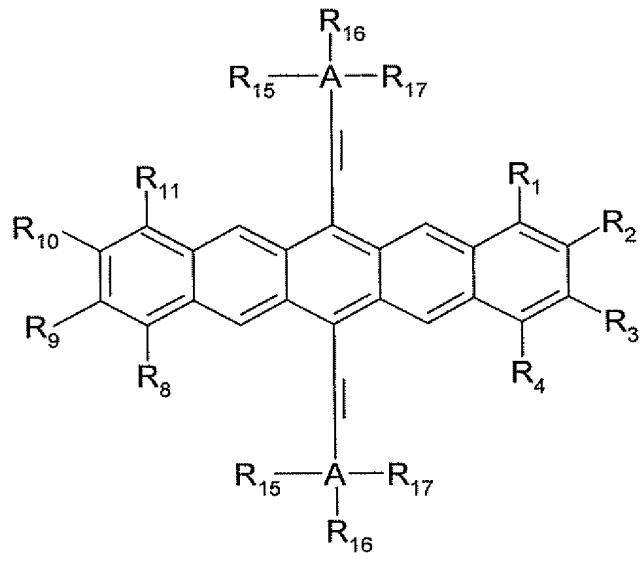


Formula 1

and

compound Group 8 is represented by Formula 8:





Formula 8

wherein, R₆ and R₁₃ in Group the compound of formula 1 and R₁, R₂, R₃, R₄, R₈, R₉, R₁₀, R₁₁, R₁₅, R₁₆, and R₁₇ and R₁₈, in Group the compound of formula 8 are each independently the same or different and each independently represents: H; an optionally substituted C₁-C₄₀ carbyl or hydrocarbyl group; an optionally substituted C₁-C₄₀ alkoxy group; an optionally substituted C₆-C₄₀ aryloxy group; an optionally substituted C₇-C₄₀ alkylaryloxy group; an optionally substituted C₂-C₄₀ alkoxy carbonyl group; an optionally substituted C₇-C₄₀ aryloxycarbonyl group; a cyano group (-CN); a carbamoyl group (-C(=O)NH₂); a haloformyl group (-C(=O)-X, wherein X represents a halogen atom); a formyl group (-C(=O)-H); an isocyano group; an isocyanate group; a thiocyanate group or a thioisocyanate group; an optionally substituted amino group; a hydroxy group; a nitro group; a CF₃ group; a halogen halo group (Cl, Br, F); or an optionally substituted silyl group; and wherein independently each pair of R₁ and R₂, R₂ and R₃, R₃ and R₄, R₈ and R₉, R₉ and R₁₀, R₁₀ and R₁₁, R₁₅ and R₁₆ and R₁₆ and R₁₇ may be cross-bridged with each other to form a C₄-C₄₀ saturated or unsaturated ring, which saturated or unsaturated ring may be intervened by an oxygen atom, a sulphur atom or a group shown by formula: -N(R_a)- (wherein R_a is a hydrogen atom or a hydrocarbon group), or may optionally be substituted; and wherein A represents Silicon or Germanium.

3. (Currently Amended)

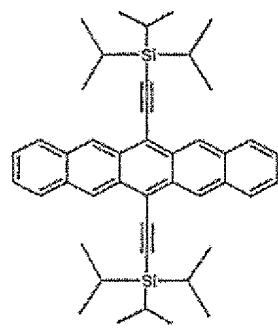
An organic semiconducting layer formulation as

claimed in claim 1, wherein n is 0 or 2.

4. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 3, wherein n is 2.

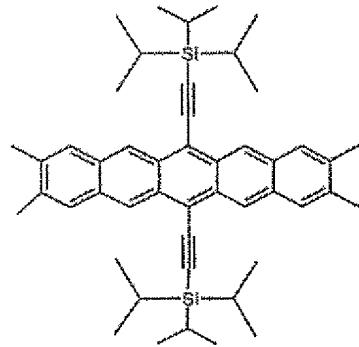
5. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 1, wherein the two or more of R₁ to R₁₂ are optionally substituted C₁-C₄₀ hydrocarbyl group groups, each of which is a saturated or unsaturated acyclic group, or a saturated or unsaturated cyclic group.

6. (Currently Amended) An organic semiconducting layer formulation as claimed in claim [[4]] 28, wherein the polyacene compound is 6, 13-bis(triisopropylsilyl)pentacene of Formula 1,



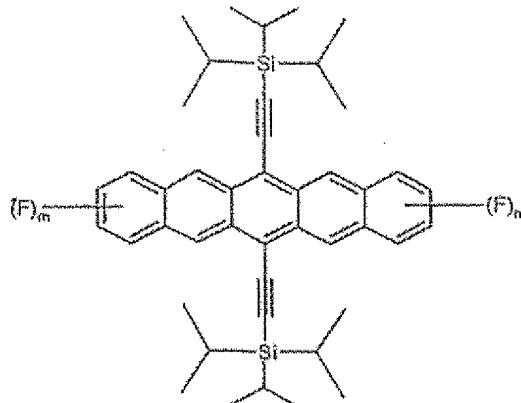
Formula 1.

7. (Currently Amended) An organic semiconducting layer formulation as claimed in claim [[4]] 28, wherein the polyacene compound is 2,3,9,10-tetramethyl,6,13-bis (triisopropylsilyl)ethynyl)pentacene of Formula 2:



Formula 2.

8. (Currently Amended) An organic semiconducting layer formulation as claimed in claim [[4]] 28, wherein the polyacene compound is of Formula 3:



Formula 3

wherein n and m is are each independently 0, 1, 2, 3 or 4, more preferably 0, 1 or 2,

9. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 1, wherein the organic binder resin has a permittivity at 1,000 Hz of less than 3.0, preferably 2.9 or less.

10. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 10, wherein the organic binder resin has a permittivity at 1,000 Hz greater than 1.7, especially a permittivity from 2.0 to 2.9.

11. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 1, wherein the organic binder resin is an insulating binder.

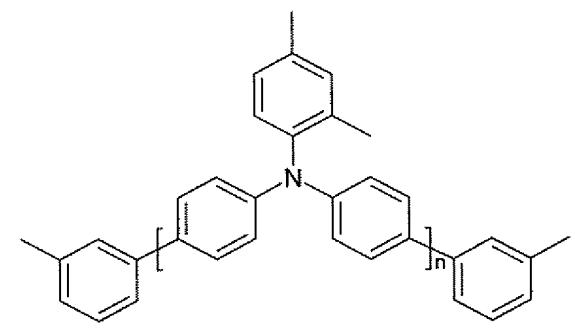
12. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 11, wherein the insulating binder is selected from poly(α -methylstyrene), polyvinylcinnamate, poly(4-vinylbiphenyl), poly(4-methylstyrene) or linear olefin and cycloolefin(norbornene)copolymer and TopasTM 8007, more preferably poly(amethylstyrene), polyvinylcinnamate and poly(4-vinylbiphenyl).

13. (Currently Amended) An organic semiconducting layer formulation

as claimed in claim 1, wherein the organic binder resin is a semiconductor binder.

14. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 13, wherein the semiconductor binder comprises a number average molecular weight (M_n) of at least 1500-2000, ~~more preferably at least 3000, even more preferably at least 4000 and most preferably at least 5000.~~

15. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 13, wherein the semiconductor binder is ~~selected from~~ poly(9-vinylcarbazole) or a triarylamine compound of the following formula



wherein n=10.7 PTAAl.

16. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 1, wherein the formulation further comprises a solvent.

17. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 4 16, wherein the solvent is ~~selected from~~ xylene(s), toluene, tetralin and or dichlorobenzene.

18. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 1, wherein the ratio of polyacence compound to binder is 20:1 to 1:20 by weight, ~~preferably 10:1 to 1:10 more preferably 5:1 to 1:5, still more preferably 3:1 to 1:3 further preferably 2:1 to 1:2 and especially 1:1.~~

19. (Currently Amended) An organic semiconducting layer formulation as claimed in claim 1, which ~~comprises~~ has a solids content of 0.1 to 10% ~~more preferably 0.5 to~~

5% by weight.

20. (Currently Amended) A process for preparing an organic semiconducting layer formulation as claimed in claim 1, comprising which comprises: (i) depositing on a substrate a liquid layer of a mixture which comprises the polyacene compound, the organic binder resin or precursor thereof and optionally a solvent, and (ii) forming from the liquid layer a solid layer which is the organic semiconducting layer.

21. (Currently Amended) An electronic device, comprising an organic semiconducting layer formulation as claimed in claim 1.

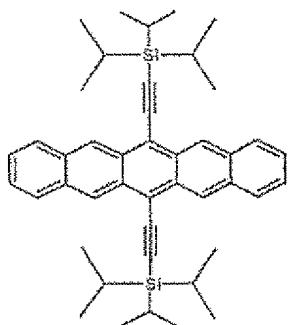
22. (Currently Amended) An electronic device according to claim 21, which comprises a field effect transistor (FET), organic light emitting diode (OLED), photodetector, chemical detector, photovoltaic cell (PVs), capacitor sensor, logic circuit, display or memory device.

23. (Currently Amended) An OFET device, comprising an organic semiconducting layer formulation, wherein the organic semiconducting layer formulation comprises:

a compound of Formula 1;

a binder; and

solvent,



Formula 1

wherein the binder is selected from poly(α -methylstyrene), TopasTM-8007 linear olefin and cycloolefin(norbornene)copolymer, poly(4-methylstyrene), polystyrene and or polystyrene-co-

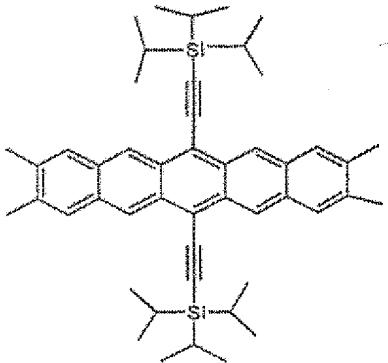
α -methylstyrene, most preferably poly(α -methylstyrene); and the solvent is selected from toluene, ethylcyclohexane, anisole and or pxylene; most preferably toluene.

24. (Currently Amended) An OFET device, comprising an organic semiconducting layer formulation, wherein the organic semiconducting layer formulation comprises:

a compound of Formula 2;

a binder; and

solvent,



Formula 2

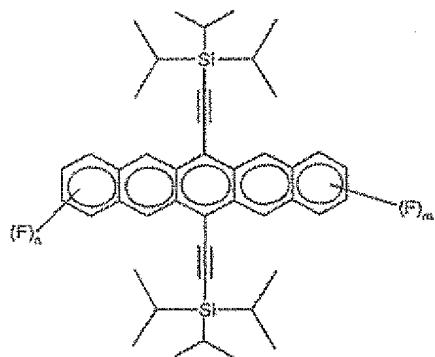
wherein the binder is selected from poly(α -methylstyrene), polyvinylcinnamate, and or poly(4-vinylbiphenyl), most preferably poly(α -methylstyrene); and the solvent is 1,2-dichlorobenzene.

25. (Currently Amended) An OFET device, comprising an organic semiconducting layer formulation, wherein the organic semiconducting layer comprises:

a compound of Formula 3;

a binder; and

a solvent,



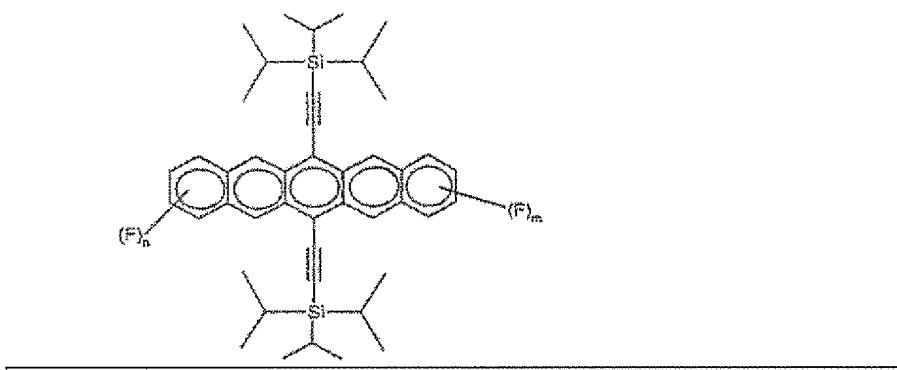
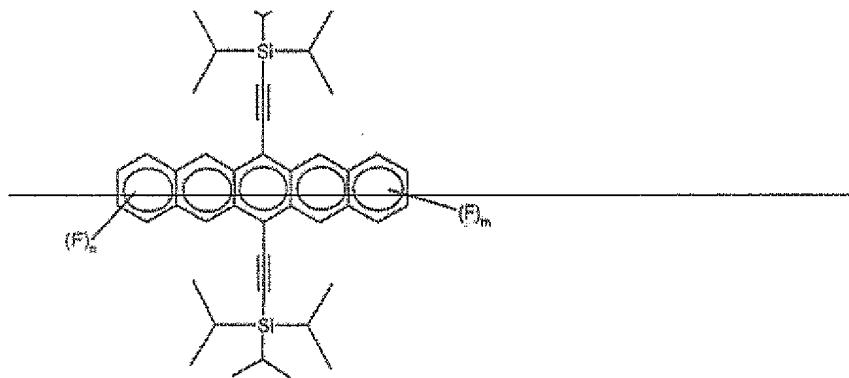
Formula (3)

wherein :

n and m are each independently 0, 1, 2, 3 or 4; ~~more preferably 0, 1 or 2;~~ and the binder is poly(α -methylstyrene); and the solvent is toluene.

26. (Currently Amended)

A compound of Formula 3

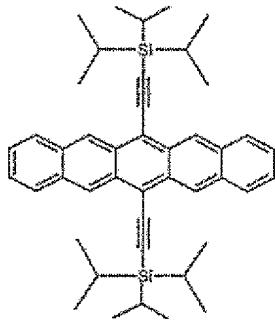


wherein n and m are each independently 1 or 3, ~~more preferably 1.~~

27. (New) An organic semiconducting layer formulation as claimed in claim 1, wherein the halogen group is Cl, Br or F.

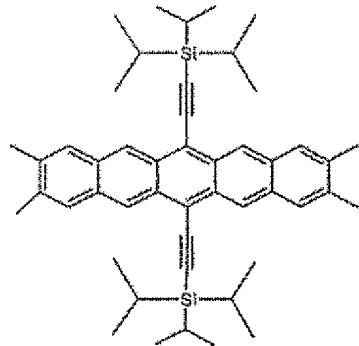
28. (New) An organic semiconducting layer formulation, comprising an organic binder which has a permittivity, ϵ , at 1,000 Hz of 3.3 or less; and a polyacene compound which is

a) 6, 13-bis(triisopropylsilyl)ethynyl)pentacene of Formula 1,



Formula 1;

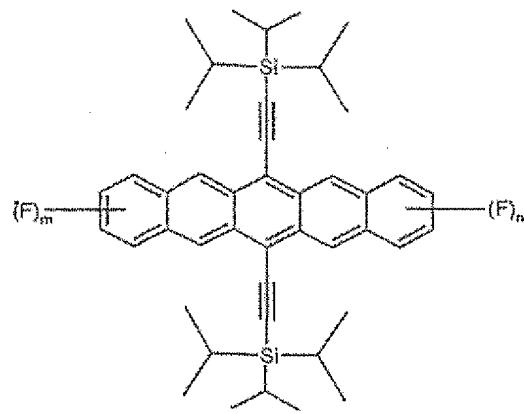
b) 2,3,9,10-tetramethyl,6,13-bis (triisopropylsilyl)ethynyl)pentacene of Formula 2:



Formula 2;

or

c) of Formula 3:



Formula 3

wherein n and m are each independently 0, 1, 2, 3 or 4.